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Application Number	10/772,752
Filing Date	February 5, 2004
First Named Inventor	Marc O. Woontner
Art Unit	2872
Examiner Name	Chang, Audrey Y.
Attorney Docket Number	22176.28 (ITW-14460)

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Supplemental Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
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- ☐ Status Letter
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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Houston Eliseeva LLP		
Signature	Maria Eliseeva		
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Date	July 17, 2006	Reg. No.	43,328

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Signature	Maria Eliseeva		
Typed or printed name	Maria Eliseeva	Date	July 17, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re:	Marc O. Woontner	Confirmation No:	5715
Serial No:	10/772,752	Group:	2872
Filed:	February 5, 2004	Examiner:	Chang, Audrey Y.
For:	Tinted Holographic Printing Material		
Customer No.:	29127		
Attorney Docket No.	22176.28 (ITW-14460)		

APPELLANT'S BRIEF

VIA FACSIMILE: **571-273-8300**
Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450,
Alexandria, Virginia 22313-1450

Sir:

This is the Applicants' appeal from the final Office Action, mailed on January 13, 2006.

Real Party in Interest

Illinois Tool Works Inc., the Assignee of the present application, is the real party in interest.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-15 are pending in the application. Claims 7-10 and 12-14 have been withdrawn from consideration. Claims 1-6, 11 and 15 are rejected and are being hereby appealed.

Status of Amendments

All amendments have been entered, except for the after final proposed amendments. Applicant disagrees with the Examiner that the proposed amendments add new features and limitations that require further considerations and searches.

Summary of Claimed Subject Matter

The present invention is a holographic or optically variable transfer material for application to a substrate, such as a document or device. The first side of the material comprises a thermally stable carrier such as PET, for supporting multiple thermoplastic or thermoset coatings or layers. A release layer is the first layer applied to the carrier to facilitate separation of the carrier from the multiple layers when they are subjected to heat from the thermal print head. A wear resistance topcoat may then be applied over the release layer to serve as the outer surface of the hologram or optically variable image. An embossable layer is applied over the topcoat. A semi-transparent reflective layer of ZnS or possibly Aluminum in the case of a opaque security image is applied over the embossable layer.

A tie or primer coating and heat activated adhesive layer are the layers providing the adherence of the transferable holographic material to the chosen substrate. The "embossment" pressed into the embossable layer consists of consecutive sections or panels. Either of the layers can be tinted with one of the primary colors, such as yellow-magenta-cyan-black. Preferably, it is the embossed layer which is tinted in such a way that each individually embossed panel is tinted in one of the primary colors. Each of the

panels is configured in such a way that it reflects incoming light at a certain distinct angle of reflection. A panel reflecting at a predetermined angle can be made by either embossing the panel to reflect at the predetermined holographic reflective angle (using a conventional holographic table), or by digitally creating the optically variable panel by embossing it from a plate or shim produced in a pixel-by-pixel manner (for example, by using a computer controlled origination machine).

Using the latter method, each tinted panel of the present invention comprises the pixels that can later be transferred onto the substrate in the process of forming a customized holographic or optically variable image. All pixels disposed in a particular panel reflect incoming light at the same angle, which angle is different from the angle at which incoming light is reflected by all pixels disposed in another panel. Similarly, if each panel comprises an embossment of a holographically reflective or optically variable angle, then each panel of the present invention will reflect incoming light at a distinct predetermined angle of reflection. The resulting final image on the substrate can be composed of blended individual tinted dots or stand alone tinted dots. In the case where the dots are blended, their combined primary colors provide a holographic appearance of the natural coloration of that dot in a photo or any other image of the like quality.

An eye-mark or registration bar to position each panel for registered printing can be provided on either the coated side or the carrier side of the product. The carrier side of the holographic or optically variable transfer material can also include coatings which eliminate blocking of the coatings as well as increase the "slip" of the transfer material against the thermal head of a printer.

Using the material and method of transferring of a holographic or optically variable image described above, a personalized or customized holographic or optically variable image can be printed on a substrate by sequentially passing the holographic or optically variable transfer material, such as a ribbon, past the thermal print head of a thermal transfer printer. Each such pass will selectively transfer the material in a pixel-

by-pixel manner, or other selective pixel manner, from different panels, so that a custom image analogous to a "conventually produced optically variable image" with holographic appearance can be printed on a substrate. For example, the transfer process can involve selectively transferring all the image forming pixels from the panel reflecting at angle α_1, then selectively transferring all the image forming pixels from the panels reflecting at angle α_2, and so on as many times as required by the structure of the image or a certain application or program. The resulting final image will consist of the blended or stand alone transferred pixels.

Grounds of Rejection to be Reviewed on Appeal

I. Whether claims 1-3, 5-6 and 11 are non-obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,396,839 to Rice.

II. Whether claim 4 is non-obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,396,839 to Rice in view of U.S. Patent 5,085,514 to Mallick et al.

III. Whether claim 15 is non-obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,396,839 to Rice.

IV Whether claims 1-6 and 11 are non-obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,834,096 to Waitts in view of the patent issued to Rice.

Arguments

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that (1) all elements of the invention are disclosed in the cited publications, which (2) must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.[1] The cited publications should (3) explicitly provide a

1 *In re Sang Su Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).*

reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.[2] As argued below, the Patent Office has not met this burden.

I. With regard to Issue I on appeal, Applicant argues as follows.

Contrary to the assertion of the Patent Office in item 3 of the Office Action (page 4), *no multi-layer material for forming an image on a substrate* is disclosed in Rice. In particular, Claim 1 recites a multi-layer material to be used to form an image on a substrate. The multi-layer material in Claim 1 and Claim 11 is not the substrate on which an image is later formed, otherwise the material and the substrate wouldn't have been two different words.

In Rice, there is no multi-layer material as recited in Claim 1 and Claim 11, which material can be used for forming an image on a separate substrate. Rice discloses a printing stock 22 on which a color image 25 is formed. If the printing stock in Rice could be analogized with anything at all recited in Claims 1 and 11 (which, as Applicant asserts, it cannot), the printing stock in Rice would be the substrate, because the Rice printing stock is the medium on which an image is formed, not the multi-layer material which is used for forming an image on a separate substrate. Rice discloses the resulting image on a printing stock (substrate), not the multi-layer material to be used to obtain an imaged substrate.

If one closely examines the disclosure in Rice, no material with a plurality of panels which can be used to form an image on a substrate could be found there at all. In Rice ink 54 from an ink roller 28 sticks on printing plate 31 only in such places where composite image 48 on printing plate 31 is (Col. 7, lines 30-33). Ink 54 is then passed by blanket cylinder 32 onto printing stock 22. That way a single color image 25 in formed on printing stock 22. There is no material, and certainly no multi-layer material in Rice

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2 *In re Fine, 5 U.S.P.Q.2d 1596. 1598 (Fed. Cir. 1988); In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970);*
Amgen v. Chugai Pharmaceuticals Co., 927 U.S.P.Q.2d. 1016, 1023 (Fed. Cir. 1996);

which is used for forming an image on the substrate-printing stock. What Rice uses for forming an image on the printing stock is ink 54 from ink roller 28, printing plate 31 with a composite image 48 and a couple of blanket cylinders (Col. 7, lines 30-44). Rice described a kind of a printing press 24 forming a certain image on the printing stock by offset lithography (Col. 7, lines 15-16). The offset lithography printing process in Rice does not use (and does not describe) a multi-layer material with a plurality of holographycally embossed or dot-matrix configured panels of the multi-layer material to form an image on a substrate, as claimed in Claim 1 and Claim 11 of the present application.

With regard to *the embossed layer* recited in Claim 1 and Claim 11, the Office Action asserts that Rice discloses "embossed layer (55, Figures 8-11)." Contrary to this assertion, reference numeral 55 does not correspond to an embossed layer. As disclosed in Rice, "...each dot 50 of a halftone image now manifested by a correspondingly located ink dot 55 on printing stock 22." (Col. 7, lines 47-48). These ink dots 55 in Rice are formed on the printing stock by ink 54 via the offset lithography printing process described in Rice. Ink dots 55 on the already imaged printing stock can be embossed with a diffraction grating, as disclosed in Col. 8, but this later embossing of separate ink dots of an already formed image on the printing stock has nothing to do with a multi-layer material with a plurality of panels, wherein panels, not individual dots, are embossed or dot-matrix configured to have holographic properties. Consistent with the disclosure in Rice, reference numerals 55 in Figures 8-11 denote individual dots, not a layer, not a panel.

With regard to *the individual panels* of the embossed layer, there is no disclosure of panels in the multi-layer material, which can be used to print a holographic image on a substrate, contrary to the assertion on page 4 of the Office Action. Diffraction gratings 56 in Rice are formed on individual ink dots 55 after the individual ink dots have already been deposited on the substrate-printing stock to reproduce the desired image. An image in Rice is formed out of individual ink dots, which can be embossed with diffraction gratings. There are no panels on any material disclosed in Rice, and cannot be, because

the Rice offset lithography printing process uses liquid ink for printing, and does not use as an image printing source any solid material of the kind recited in Claim 1 and Claim 11. Rice describes the material (printing stock) on which the ink dots can be deposited to produce a desired image, but the printing stock with an image formed with colored ink dots has nothing to do with the multi-layer material use for forming an image on a separate substrate, the material with a plurality of individual panels, each of which diffracts lights at the same predetermined diffraction angle, the angle being different for each individual panel.

In view of the above-presented arguments, at the very least, Rice lack any disclosure of such elements of Claim 1 and Claim 11 as a multi-layer material for forming an image of a substrate, an embossed layer with a plurality of panels, and each panel being holographically configured to diffract light at a predetermined angle, which is different for each individual panel. Therefore, Claim 1 and Claim 11 are patentable over Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 1 and Claim 11 is respectfully solicited.

With regard to Claim 2, it is directed to the panels embossed traditionally (with shims, as described in the Summary of the Invention part of the specification). Applicant repeats all the above-presented arguments, which are applicable to Applicant's assertion that Claim 2 is patentable over Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 2 is respectfully solicited.

With regard to Claim 3, it is directed to the panels embossed by the pixel-by-pixel method (dot-matrix, also described in the Summary of the Invention part of the specification). Applicant repeats all the above-presented arguments, which are applicable to Applicant's assertion that Claim 3 is patentable over Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 3 is respectfully solicited.

With regard to Claim 5, Rice has no disclosure of each angle corresponding to a number. No correspondence between the sequence of diffraction angles and sequence of

numbers is disclosed in Rice. Applicant asserts that this fact, together with the above-presented arguments prove that Claim 5 is patentable over Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 5 is respectfully solicited.

II With regard to issue II on appeal Applicant argues as follows:

At the very least, Rice does not disclose three elements of Claim 1, as asserted in the above-presented argument with regard to issue I. Mallik does not cure the lack of the disclosure in Rice, and, therefore, Claim 4 does satisfy the patentability requirements of 35 U.S.C. 103(a). Reversal of the Examiner's rejection of Claim 4 is respectfully requested.

III With regard to issue III on appeal Applicant argues as follows:

Rice does not disclose a multi-layer pixel on a substrate. Rice discloses an ink dot on a substrate, which is just ink. Rice cannot disclose a multi-layer pixel, because Rice teaches a certain offset lithography printing, in which ink dots are formed on a printing stock by means of an ink cylinder and a number of blank cylinders. Embossed diffraction gratings on ink dots don't make the ink dot anything like a multi-layer pixel claimed in Claim 15.

Therefore, Claim 15 is patentable over Rice under 35 U.S.C. 103(a). Reversal of the Examiner's the rejection of Claim 15 is respectfully solicited.

IV With regard to issue IV on appeal, Applicant argues as follows:

The Examiner refers to Figs. 1-3 as an alleged illustration of the materials claimed in independent Claims 1 and 11. In particular, the Examiner has stated that "Waitts

teaches a multi-layer material that is comprised of an embossable layer (32, Figures 1-3), wherein holographic indicia for providing different 3D effects (18 and 20) are formed on the embossable layer, (please see columns 3-4). It is implicitly true that the holographic indicia diffract light at a predetermined diffraction/reflection angles. Waitts teaches that different holographic effects can be reproduces which implicitly means that there are more than one panel each including a specific hologram."

Applicant's attorney has reviewed the disclosure of Waitts and could not find any teaching of the material as claimed in Claim 1 and Claim 11. Specifically, with regard to Fig. 1 Waitts says that "[T]he card includes printed, readable indicia, i.e. in the form of readable letters 12, numbers 14, a diffraction grating pattern 16 depicted as a pattern of dashes and dots and having a two dimensional or 2D effect, 3D holographic indicia represented by virtual solids 18 and 20 drawn in dashed lines, and a multicolored design 22 having variously colored segments 24." (Col. 3, lines 14-19). "The virtual images 18 and 20 are created by embossed reflection holograms." (Col. 3, lines 24-26). Nothing else was found in Waitts with regard to indicia 18 and 20. On other words, Fig. 1, as well as Figs. 2-3, shows a card with some holographic images, including 3D images, already formed on that card. That already formed image on the card has nothing to do with the multi-layer material having the structure claimed in Claim 1 and Claim 11, for forming an image. That card in Fig. 1 is a final product, its material cannot be used for forming an image on a different substrate, therefore, it cannot be a multilayer material for forming an image, as claimed in Claim 1 and Claim 11.

To further address the assertions of the Examiner, Applicant point out that the fact that the card shown in Fig. 1 has 3D holographic indicia does not suggest that these indicia form the plurality of panels. Waitts says that indicia 18 and 20 have a 3D effect, but is silent on the underlying structure that causes such visual effect. It is unclear from Waits whether the structure of indicia 18 and 20 is a panel-like at all. The dashed lines and dots shown in Fig. 1 are not even panels, but one-dimensional lines or just dots. Nothing in the Watts disclosure teaches or suggests that indicia 18 or 20 have the structure that could be a panel. The description in Watts suggests that these indicia are

dashed lines with a 3D visual effect. Therefore, no disclosure of a plurality of panels as claimed in Claims 1 and 11 could be found in Waits, contrary to the assertion of the Examiner.

Furthermore, while it is known that a diffraction grating will diffract incoming light in accordance with the general diffraction equation in which the angle of diffraction of one of the variables, Applicants claimed multi-layer material for forming an image claims that the material comprises a plurality of panels, and that each panel is configured in a specific way, namely, that each holographic panel diffracts at a know predetermined angle of diffraction. Nothing in Waitts, combined with general diffraction equation, suggests such claimed structure of the material for forming an image.

Also, as described in Waitts with regard to Fig. 4, the "hologram may be formed in a layer of embossable media, typically by embossing with a roll die." (Col. 4. lines 53-55). In other words, the resulting holographic image is embossed in layer 32. The same holographic image is presented, for, example, in Fig. 3 of the card, formed by hot stamping, as described in Watts with regard to Fig. 3. An image of the kind describes in Waitts normally contains diffractions gratings of different pitch and orientation to create the expected holographic effect. To the contrary, the embossing of the plurality of panels is not the final holographic image of Waitts, but, as claimed in Claims 1 and !!, the first panel with embossing that has the same pitch and orientation of its gratings (therefore, the same angle of reflection, as claimed), the second panel comprising embossing of the gratings of the same second pitch and orientation (therefore, a second predetermined angle, the same for the whole second panel), and so on for each panel of the plurality of panels in the material. No description, teaching or motivation to come up with such a structure could be found anywhere in Waitts.

For the above-articulated reasons, Claims 1 and 11 (together with Claims 2-5 dependent off Claim 1) satisfy the patentability requirements of 35 U.S.C 103(a) and are patentable. Withdrawal of the rejection f these Claims is respectfully solicited.

With regard to Claim 2, it is directed to the panels embossed traditionally (with shims, as described in the Summary of the Invention part of the specification). Applicant repeats all the above-presented arguments, which are applicable to Applicant's assertion that Claim 2 is patentable over Waitts in view of Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 2 is respectfully solicited.

With regard to Claim 3, it is directed to the panels embossed by the pixel-by-pixel method (dot-matrix, also described in the Summary of the Invention part of the specification). Applicant repeats all the above-presented arguments, which are applicable to Applicant's assertion that Claim 3 is patentable Waitts in view of Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 3 is respectfully solicited.

With regard to Claim 5, Rice has no disclosure of each angle corresponding to a number. No correspondence between the sequence of diffraction angles and sequence of numbers is disclosed in Rice. Applicant asserts that this fact, together with the above-presented arguments prove that Claim 5 is patentable Waitts in view of Rice under 35 U.S.C. 103(a). Reversal of the rejection and allowance of Claim 5 is respectfully solicited.

V. Matters related to Claim Objections in the Final Office Action.

Claims 1-6, 11 and 15 were objected to because of informalities. Claims 1-6, 11 and 15 have been rewritten to correct these informalities. The Examiner did not enter the amendments, addressing the informalities.

1) To answer these objections, Applicant explains as follows. With regard to item 1 of the Office Action on page 2, each panel comprises a holographic embossing for diffracting incident light, each panel's holographic embossing is comprised of pixels diffracting incident light at the a certain angle, which is the same for the pixels within the same panel (which is described as holographically configured).

The term "optically variable" is well known in the security industry and denotes a holographic structure that changes appearance when viewed at different angles[3]. The diffraction gratings of the holographic configuration of a panel, as recited in Claim 1, make its appearance optically variable, because white light incident on a holographically configured panel diffracts different components of the visible light spectrum at different angles due to different wavelengths of the components (from red to violet). Therefore, a viewer will see different colors of diffracted light at different angles. Relevant description in the specification can be found, for example, in paragraph [0008]

> Each of the panels is configured in such a way that it reflects incoming light at a certain distinct angle of reflection. A panel reflecting at a predetermined angle can be made by either embossing the panel to reflect at the predetermined holographic reflective angle (using a conventional holographic table), or by digitally creating the optically variable panel by embossing it from a plate or shim produced in a pixel-by-pixel manner (for example, by using a computer controlled origination machine).

Applicant respectfully asserts that in view of the presented explanation of terms known in the industry, claimed panel embossed to have holographycally and optically variable configuration is well-defined.

2) With regard to Claim 5, it has been amended to clarify that each angle α_n corresponds to a number, which can be assigned to each angle in any desired way, including, but not limiting to, an arbitrary assignment. Applicant believes that the amendment was not entered by the Examiner, although it has been done for clarification and did not raise a new issue and did not require a new search.

3) Claim 6 has been cancelled. Applicant believes that the amendment was not entered, as follows from the Advisory Action of April 24, 2006.

4) With regard to Claim 15, the structure of the multi-layer image forming material has been clarified in Claim 15. Applicant believes that the amendment was not entered, as follows from the Advisory Action of April 24, 2006.

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[3] See, for example, http://www.nbs.sk/MENA/BANKOVKY/OZ7A.HTM (enclosed with the Evidence page)

With regard to the "multi-layer holographic pixel" element – Applicant is not sure what the confusion is. It is a pixel transferred from the image forming material onto a substrate. The image forming material is multi-layered, as claimed in Claim 15, the pixel made of that material is also multi-layered, since it is the same material. It is asserted that with more structure of the material now in Claim 15 the confusion has been resolved.

For the foregoing reasons, Applicant believes that the pending rejections should be withdrawn, and that the present application should be passed to issue. Should any questions arise, please contact the undersigned.

Respectfully submitted,

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Date: July 17, 2006

Claims Appendix

1. (Previously Presented) A multi-layer material for forming an image on a substrate, the material comprising an embossed layer comprising a plurality of panels, wherein each individual panel is tinted with one of the YMCK colors and is holographically and optically variably configured to diffract incoming light at a predetermined reflection angle α_n, which predetermined angle α_n is different for each individual panel.

2. (Previously Presented) The material of claim 1, wherein each individual panel is holographically and optically variably configured by being embossed to diffract incoming light at the predetermined angle α_n, which angle α_n is different from the angles of reflection of the embossings in other panels.

3. (Previously Presented) The material of claim 1, wherein each individual panel is holographically and optically variably configured to comprise a plurality of pixels embossed in such a way that all pixels disposed within the same individual panel diffract incoming light at the predetermined angle of α_n, resulting in a multi-panel arrangement wherein each panel comprises pixels embossed to diffract incoming light at an angle different from the angles of diffraction of the pixels in other panels.

4. (Previously Presented) The material of claim 1, further comprising a thermally stable layer, a wear resistant layer or top coat, a reflective layer overlaid upon the embossed layer and a heat activated adhesive layer serving to attach the material to the substrate upon heat activation.

5. (Previously Presented) The material of claim 1, wherein each of angles α_n ($n \leq 256$) is assigned a number.

6. (Cancelled)

7. (Withdrawn) A method of forming a color image having a holographic appearance on a substrate, the image being comprised of image forming pixels, the method comprising: providing a transfer material having an embossable layer comprising a plurality of panels, wherein each individual panel is tinted with one of the primary colors and is processed to diffract incoming light at a predetermined reflection angle α_n, which predetermined angle α_n is different for each panel; and forming the color image on the substrate by selective pixel transferring of the image forming pixels from each individual panel tinted with one of the primary colors onto the substrate.

8. (Withdrawn) The method of claim 7, wherein selective pixel transferring comprises heat activating of each pixel of the image forming pixels and causing each pixel to separate from the transfer material and to adhere to the substrate.

9. (Withdrawn) The method of claim 8, wherein selective pixel transferring comprises heat activating of each pixel of the image forming pixels and causing each pixel to separate from the transfer material and to adhere to the substrate.

10. (Withdrawn) The method of claim 7, further comprising providing a computer controlling selective pixel transferring of the image forming pixels from the transfer material to the substrate to form the holographic image.

11. (Previously Presented) A multi-layer material for forming an image on a substrate, wherein any layer of the multi-layer material is tinted with one of the YMCK colors, the material comprising an embossed layer comprising a plurality of panels, wherein each individual panel corresponds to one of the YMCK colors

and is holographically and optically variably configured to diffract incoming light at a predetermined reflection angle α_n, which predetermined angle α_n is different for each individual panel.

12. (Withdrawn) A method of forming an image having a holographic appearance on a substrate, the image being comprised of image forming pixels, the method comprising: providing a multi-layer transfer material wherein any layer of the multi-layer material is tinted with one of the primary colors, the material having an embossable layer comprising a plurality of panels, wherein each individual panel corresponds to one of the primary colors and is processed to diffract incoming light at a predetermined reflection angle α_n, which predetermined angle α_n is different for each panel; and forming the image on the substrate by selective pixel transferring of the image forming pixels from each individual panel tinted with one of the primary colors onto the substrate.

13. (Withdrawn) The method of claim 12, wherein selective pixel transferring comprises blending individual pixels.

14. (Withdrawn) The method of claim 12, wherein forming the color image on the substrate by selective pixel transferring comprises forming stand alone pixels on the substrate.

15. (Previously Presented) A holographic image formed on a substrate, the holographic image comprising a plurality of multi-layer holographic pixels formed on the substrate by separating from a multi-layer image forming material and adhering to the substrate in a pixel-by-pixel transfer process, wherein each of the pixels is comprised of either a pixel tinted in one of the primary colors or of more than one pixels tinted in one of the primary colors, and wherein each pixel diffracts light at a predetermined diffraction angle α_n.

Application No.: 10/772,752
Filed February 5, 2004
Appellant's Brief
Submitted: 17 July 2006

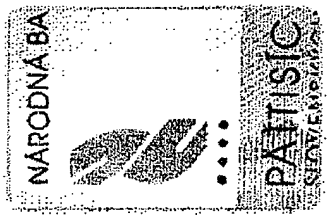
Evidence Appendix

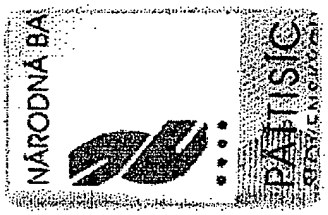
Security features of the banknotes - Optically variable feature

series 1995

Optically variable feature - is a security feature on the front of the banknote printed in the form of a crescent in intaglio using special pigments having variable optical features. When the note is held against the light and viewed at a right angle, the colour of the crescent is gold, and when the note is viewed at an angle of 30 to 40 degrees, the colour of the optical device changes to green (on 5000 Sk banknote only). On 1000 Sk banknote the colour of triangle chengis from magenta to grenn (only series 1993 and 1995).

series 1999





Sk 200 banknotes reprinted in 1999 feature stylised lime leaves printed on the coupon by using the silk-screen technique and special pigments with variable optical effects. When the note is held against the light and viewed at right angles, the leaves are green, but when the note is viewed at a different angle, the colour turns purple-red. On the 1000 Sk banknote series 1999 two stylised thorus of the rose are printed in optically variable ink, the colour of which changes from magenta to gold-green. The reprints of Sk 5000 notes show a stylised sun and sun-rays, printed by using special pigments the colour of which changes visibly from gold to green. On the 500 Sk banknote series 2000 is in optically variable ink printed stylised image of eagle`s head with green to blue colour shift.

Security features of the banknotes

Related proceedings appendix

None